THE LOGICAL FOUNDATIONS OF DEMOCRATIC DOGMA[1]

I

SCIENCE AND MAN: THE DEGRADATION OF SCIENTIFIC DOGMA

I. INTRODUCTION

A

YOU are doubtless wondering why, in this time of stress and strain, a philosopher of all men should be asked to speak to you. And you have a right to wonder. If, as the ancient Roman dictum has it, *inter arma leges silent,* even more in such times should the philosopher withdraw into silence and leave the field to better men. For this is not the time, it will be said, for abstract thought and balanced judgment, but for emotion and action.

And yet a strong case can be made out for the opposite. If in time of war laws are silent it is just at such a time that the law should speak most majestically. If in time of war unreason is in the saddle it is at such a time that man, if he is to remain man and not sink to the level of the beast, should think most about reason and rationality.

"The philosopher," wrote William James, "is simply a man who thinks a little more stubbornly than other people." It is, however, not merely this stubbornness that distinguishes the philosopher but rather what all his stubborn-

[1]A course of three public lectures delivered at the Rice Institute, February 22, 24, and 26, 1943, by Wilbur Marshall Urban, Dr. Phil., L.H.D., Professor of Philosophy, Emeritus, at Yale University.

ness is about. The scientist discovering a new law, the inventor perfecting a new instrument of beneficence or maleficence—the administrator, the industrialist—all these think very hard about many important things. It is for the philosopher to think what these things are really all about.

Eternal vigilance, it is said, is the price of liberty. With equal truth it may be said that eternal thinking—stubborn and pitiless thought—is the price of rationality. There are certain truths by which men live—dogmas which underlie the life of reason in man, concerning which man must think constantly if he is to remain rational, if, indeed, he is to remain man at all.

B

This brings me to the general subject of these lectures, The Logical Foundations of Democratic Dogma, for it is about these foundations that I would have you think. We like to speak of the democratic way of life—but there is no way of life, democratic or other, that does not have its dogmas—or, as the modern phrase has it, its ideology.

There are three truths by which the democratic life is lived, whether we know it or not. There is first of all what I shall call the scientific dogma—the belief in the primacy of reason in the life of man, and in the freedom of man through knowledge or science. There is, secondly, the political dogma—the belief that man, *as man,* is a rational being, and, as such, has certain natural and inalienable rights or claims; and that universal justice—or giving every man his due—has absolute value. Finally there is a third dogma with which these two are logically bound up, namely, the belief in progress and the development of man. This is the principle of reason in history—that history is not sound and fury signifying nothing but has an ultimate meaning and an end.

You may wonder why these things need to be thought about at all. Yet every one of these dogmas is now called in question, not only by the anti-democratic ideologies with which we are familiar, but by so-called democratic thinkers themselves. These dogmas, we are told, belonged to the "old liberalism" of the nineteenth century; the new liberalism of the twentieth must discard them. Moreover, as we shall see, they constitute a logical structure; if they do not hang together they will hang separately. It is the logical foundations of this structure which we have to examine.

There can be no question, I think, that the primary and most fundamental of these dogmas is the belief in reason and science as the foundation of society and of human welfare and happiness. It is this scientific dogma that will engage our attention in this first lecture.

II. THE AGE OF SCIENCE AS AN AGE OF UNREASON

We like to think of our age as one of universal intelligence and enlightenment—in short as an age of reason. In reality this very "age of science" is also one of the deepest intellectual and spiritual confusion—of fundamental unreason.

It is doubtful if there has ever been an age in which man has understood himself so little, in which he has been so knowing and yet so unaware, so burdened with purposes and yet at bottom so purposeless, so disillusioned and yet feeling himself so completely the victim of illusion. This indecision permeates our entire culture—our industry and our art, our science and our philosophy. Is it strange that these clouds of doubt which have hung over Western man so long should finally have burst into a storm of unreason such as man has never before known?

Do you doubt that these are the characters of our age? What shall we say of an age in which man's industry has

grown ever fiercer and fiercer, while the doubt of the good of the economic system under which we are working—even of its ability to survive—becomes ever more and more insistent? What shall we say of an epoch in which the means of artistic expression become ever more complicated and refined only to leave us haunted by the feeling that there is less and less to express; of an epoch in which science and knowledge "grow from more to more," while faith in the ultimate meaning and value of that knowledge becomes weaker and weaker?

Even the man in the street is dimly aware of these contradictions in our modern life but much of it he does not comprehend. There is, however, one outstanding fact of the present situation which he both understands and dreads. It is connected with the thing we call science.

Science every one knows and thinks he understands. For the man in the street science means primarily invention. He glories in the tremendous advances in physical science and stands in wonder before its machines. He glories not only in what science can do with things but what, as he believes, it can make of man. Freedom through scientific intelligence and invention has been one of the fundamental dogmas of the modern epoch. But now he finds this thing called science turned to the destruction of the very culture which produced it. He cannot help asking whether there is, after all, not something inherently vicious, some metaphysical evil, so to speak, in the machines themselves. Then he laughs at himself and awakes from his evil dream. It is, he cries, not science and the machine that are at fault, but the men that make them. When we have a satisfactory science of man, when we have learned to control men and society in the way we have learned to control things, all will be well.

So men thought in the gay nineties; they were gay and confident about science as about everything else. So many

think, even now, God help them! But the more thoughtful have awakened from the dream of the old liberalism and realize that it is precisely by such thoughts that mankind has thrust itself even deeper in the bog of confusion and illusion. Even the man in the street has come to see that such science, and such control of man through science, would make of man himself a machine, a robot which, precisely because he can be thus controlled, is all the more dangerous. The shibboleth of social control, the panacea of the last decades, has developed into scientific propaganda the full significance of which is nowhere yet fully understood.

These are indeed disturbing thoughts. They have disturbed the man in the street, but still more the scientist and the philosopher. It is highly significant that ever since the present war began precisely this topic, Science and Man, has become a chief subject for discussion in all the leading scientific societies of Great Britain and America. Only recently a symposium was held in New York the results of which were embodied in twenty-four essays published under the topic *Science and Man*. One thing stands out clearly as the result of this discussion—the necessity of a new evaluation of science. Differ as they did in many things, all the contributors agreed on one point as summarized in the Preface: "If man's civilization and welfare is to be maintained the one thing needful is a clearer understanding of the relation of science to values; of our human values themselves; and a truer perspective in which science and technology will be seen in their rightful rôles as instruments or implements, not masters of these values." This clear understanding is in part the object of this lecture.

III. REASON AND SCIENCE: THE DEGRADATION OF SCIENTIFIC DOGMA

A

Science, and man's faith in science, are often supposed to be a wholly modern thing. Quite the opposite is, however, the case. It is the inheritance of a long history of Greek and Christian culture. For the Greek mind man's reason was the reflection of the universal reason or logos in the world. Science or reason was thus the basis of a significant life. For the Christian this same logos was the reflection of the Divine mind. "Why," asks St. Augustine, "should God disdain reason, his first-born son?" St. Augustine did not disdain it, nor did the entire Christian culture that followed. For St. Thomas, reason and science were even the basis of religious faith and the great cosmologists, from Galileo to Newton, all believed that their science was but a retracing of the footsteps of God in nature.

The story of man's loss of faith in this ideal of reason—in this scientific dogma, as I shall call it—is too long to tell in full. It is important, however, that we should note the high spots in that story in order that we may see the direction in which our modern scientific culture has gone.

It began, I think, precisely at the point at which science, in the exclusive modern sense, is supposed to have begun—in the dictum of Francis Bacon that knowledge, or science, is power. Hitherto the object of science was to understand; now its object is power and control—over both nature and man. The divorce of knowledge and science from the moral and spiritual values was the first step in its degradation. A second important step was the so-called positivism of Auguste Comte, which, in one form or another, has come to dominate the science of the modern world. According to this view, there have been three stages of human culture,

the religious, the philosophical, and the scientific. The first stage, it is held, is one of myth and superstition, the second, or philosophy, is the myth rationalized, the final stage is science, which not only surpasses the others but is eventually to supersede them. According to Comte, a science of humanity, or what we now call the social sciences, would free man from all the illusions and superstitions of the past.

A third step in this process of degradation was, however, still to come. We may describe it as the pragmatism or instrumentalism of the twentieth century. Here the dictum that science is power, with which modern experimental science began, reaches its culmination. According to this conception of science, its object is no longer to understand but to operate and control; science becomes identical with technology. What men called the laws of nature are no longer viewed as the expressions of an objective reason or idea, but merely useful instruments for the manipulation of things in the interest of human desires. Physical science no longer retraces the footsteps of God in nature, but is concerned merely with manipulating a material nature which is itself essentially godless and irrational. Finally this notion has been applied to man. Man is no longer an embodiment of reason, an end in himself, but a part of nature, to be controlled like any other part of nature, for his own good, or for social and national good which transcends himself.

B

I have presented a picture of modern science which all of you will, I think, recognize. In one of his books Henry Adams speaks of the degradation of democratic dogma. I shall borrow the term from him and shall speak of the degradation of scientific dogma. The two are not unrelated, as we shall later see, for in the modern world science and democracy are related in a most intimate way. But for the

moment we shall speak of the degradation of scientific dogma.

That, despite its magnificent outward show and accomplishment, there has been an inner degradation few of you would be disposed, I think, to deny. The degradation of science consists, first of all, in the ignoble uses to which it has been put. I do not mean merely its most obvious degradation—the control of the forces of nature for vicious and destructive ends; I mean still more the employment of science for the manipulation and control of men. The very term scientific propaganda is, to my mind, a startling measure of this disgrace.

But this use of science to ignoble ends is itself but an outward expression of an inner degradation of the ideal of science or knowledge itself. Instead of the traditional view of science as reason, we have finally reached a view according to which knowledge itself has no ultimate validity but is merely a useful instrument for the control of phenomena in the interest of life which is itself irrational. It is not too much to say that this vaunted rationality of science is based upon a fundamental irrationality. This is such an important part of my entire argument that, at the risk of being overtechnical, I must dwell upon the point for a moment.

The modern man had placed his faith in science. If knowledge is not the only good, it is the highest good. But suppose science, turning upon man and his knowledge, tells us that man's reason is but a useful instrument to adapt the biological organism to its environment—that truth itself is merely our name for such adaptation and control. Surely, as Earl Balfour has said, science cuts off the very limb upon which it sits. This situation is but dimly felt by the man in the street, but it is increasingly felt by the scientist and philosopher. In thus completely naturalizing our intelligence we have denatured it, taken all the meaning out of it.

The "rake's progress" of modern science has been swift and certain. It began by the divorce of science from wisdom and from the moral and spiritual values the acknowledgment of which is implied in wisdom. This postulate of the independence of science passed then to the dogma of the supremacy of science and its mastery over the ends and values of life. Finally, being thus divorced from reason in the larger sense, it ended in a philosophy of irrationalism and illusionism which includes science itself. Of the modern spirit it has been well said by a recent poet:

> It feels that knowledge is the only good,
> Yet fears that science may confound it quite,
> Changing what yesterday seemed logical
> To something different and bitter overnight.

It is this confounding of knowledge by science—this turning of science against its own principles and its own faith in objective reason in nature and in man, which marks, not only the final degradation of scientific dogma itself, but constitutes also the inner source of man's disillusionment with science itself.

The historian Ferrero was fully aware of this situation. He tells us that here we have the great problem with which contemporary thought is confronted. Everything seems to totter and fall around man, who, by transcending all natural limits, has become too powerful—transcendence of all natural limits—natural law in science and knowledge, natural law in society and politics, absolute norms in logic and morals. Man has become too powerful through a science divorced from these, but in this power he has lost all power over himself, for he has exchanged the universal reason for the irrational will to power. The Victorian poet sang:

> Let knowledge grow from more to more
> But more of reverence in us dwell.

Knowledge, science, has indeed grown from more to more,

but the reverence has departed—the reverence, for God, for Nature and for Man—yes, even reverence for science itself.

IV. SCIENCE AND MAN: THE PROBLEM OF THE SOCIAL SCIENCES

A

It is scarcely to be wondered at, then, that everywhere scientists are themselves taking stock of this thing called science. Still less is it to be wondered at that the issues presented should appear to them under the question of Science and Man. For it is, in fact, the last stage of this process of degradation that man who made science has done so only to become its slave. It is not surprising, then, that science is asking anew the question, what is man?

Only last year in this very place Professor E. G. Conklin gave a course of lectures on this title. And a few years before the distinguished biologist, J. A. Thompson, wrote a book under the same title. It is not a mere coincidence that both the scientists who asked this question were biologists. For it was modern biology under the aegis of Darwinism which first challenged the traditional view of man as developed through the thousand years of Christian thought. It is only natural that, in the second thoughts about man which are now arising, it is the biologists that should raise the question.

All the sciences of life and mind were profoundly affected by the publication in 1859 of Darwin's *Origin of Species* and by the *Descent of Man* which followed in 1861. For a time it seemed that all our ethical and social conceptions would be recast in the light of the new principles of evolution and in view of the changed conception of man which the new knowledge brought with it. It was believed that for the first time we had come into possession of a really scien-

tific knowledge of man and of his place in the universe, and that upon that knowledge a really scientific view of human good could at last be erected.

There are two points at which evolutionary science has almost completely revolutionized our conception of man. In the first place, it has naturalized him by attempting to explain his intelligence and morals in terms of the irrational and amoral forces of natural selection and the struggle for existence. In the second place, it has developed a purely naturalistic theory of human good or value which makes of his morals and values merely instruments of survival, or of satisfaction of natural desires and of the will to power. This complete naturalization of man—of his intelligence, his morals, and even of his religion—has been the main theme of the social sciences of the last half century.

It is rarely realized how far this naturalization of man has gone, or how insidiously it has transformed our entire conception of human rights and justice—transformed them from the rôle of ends in themselves to that of mere instruments or means to social and national ends. Of this I shall speak more fully in the next lecture. A distinguished French Abbé, speaking of Darwinism as applied to man, said this more than a half century ago. "It matters little so long as these ideas are confined to the *intellectuals*. But wait until they penetrate to the mind of the masses and then see what you get." They have now sunk to the level of the masses and become the ideologies of whole peoples, and we know well enough what we have got. Before the wholesale manipulation of men we stand aghast, but we have yet fully to realize that it is this complete naturalization of man which forms the ideological basis for the political philosophies which we both fear and scorn.

Is it to be wondered at that this situation has led to serious heart searchings among the social scientists and philoso-

phers themselves? That they should conduct symposiums on the subject of Science and Man, and that they should be revising their notions about the sciences that deal with man? Certainly, a notable change is taking place in the intellectual climate and it is to some of these changes that I wish now to call your attention. I believe them to be of great importance.

B

The dominant idea of the Darwinian epoch was the dogma of the unity of science. Dazzled by the triumphs of the physical sciences, men believed that the methods of the sciences which deal with things could be carried over to the sciences which deal with man. It followed from this conception that the ideal of science was to reduce all phenomena to their physical basis—mind, with its knowledge and morals, to biological conceptions; the biological to the chemical and the chemical to the physical. This ideal of scientific method has been called reductionism—reduction of the complex to the simple and of the higher to the lower.

It cannot be denied that much has been accomplished by this method. If you wish to manipulate and control men as you would an animal or a thing, this is indeed the way to go about it. Behavioristic and Freudian psychologies have scored their triumphs by this method. Only slowly did it dawn upon the scientist and philosopher that this does not give us knowledge of man but of that which is below man. Only slowly have they realized that to reduce man to that which is below him is really to dehumanize him. Is it to be wondered at that thus to dehumanize man in the sphere of theory means ultimately to dehumanize him in the sphere of practice also? That man's inhumanity to man in his thoughts about his fellows should lead ultimately to inhumanity in his deeds?

In any case, this is what has really happened, and it is for

this reason also that even scientists are concerned about this problem of science and man. There is a strong reaction against this dogma of the unity of science and all that it implies. Men speak of a decentralization of the sciences. The oft-quoted saying of the social philosopher Dilthey may be taken as a symbol of this change of intellectual climate. "Nature," he cries, "we explain; the soul we understand." We do not understand man by reducing him to nature. To explain him thus is to explain him away. We understand him only in terms of the ends and values which make him man. The science of man is not a science in the same sense as the physical sciences. The material of the two types of science is so different that the methods must be different also. This principle of decentralization was applied in the first place to the science of history, of which we shall have more to say in a later lecture. The methods of history and of the social and political sciences bound up with history must be distinguished completely from those of the natural sciences—a thesis which has found classical expression in Rickert's book, *The Limits of the Physical Sciences.*

Now I am far from asserting that this point of view has triumphed in the sciences of man. If it were so, I should not need to emphasize the point as strongly as I do. But I do say that more and more the representatives of the sciences which deal with man are revising in many ways their conceptions of the nature of the social sciences. In this connection I am fond of an expression of Ernst Troeltsch who represents this standpoint in the sphere of history. "More intelligent intercourse with the material of history," he tells us, "has changed our notions of the method of history." And this is true of the social sciences in general.

In a recent public address President Dodds of Princeton admitted that we must recognize that political science is not science in the sense that many have supposed it to be—

namely, with the objects and methods of the physical sciences. More intelligent intercourse with the material of his subject has convinced him of this and he is fundamentally right. Our handling of the phenomena of the sciences of the human has been grossly unintelligent at points. We have even been guilty of the absurdity of bewailing the fact that these sciences have not approached the perfection of the physical sciences and that consequently, we cannot control man as we can nature. The last thing in the world that we should want is to control men in this way. The only intelligent purpose of the sciences of man is to understand man and thus to bring about that self-control which follows from the free acknowledgment of the ends and values of society. Any other sort of control is in the end as futile as it is abhorrent.

C

The first half of the twentieth century will go down in history as the period in which men gradually became aware of the fallacies of the nineteenth. These fallacies are many, both practical and theoretical. The results of our practical fallacies in economics and politics are becoming only too evident in the very fury with which these fallacies and illusions are revenging themselves in the magnificent irrationality of war. But, after all, it is the theoretical fallacies which are most significant, for wherever you find fallacy in action you may be assured that it is but the outward sign of fallacies in theory.

The fallacies of Darwinian naturalism were early sensed, among others by T. H. Huxley, whose famous Romanes lecture, entitled *Evolution and Ethics,* will go down as a classic in the story of the culture of modern Europe. It was, to be sure, little honored at the time, but his main contentions have become an essential part of the critical social

science and philosophy of our day. Professor G. E. Moore of Cambridge has embodied them in his famous formulation of the *naturalistic fallacy*. The understanding of this fallacy is so important for all that follows that I must try to make it quite clear.

The naturalistic fallacy is one which inevitably follows from the dogma of the unity of science and its implied reductionism. It consists in supposing that the values by which man, as man, lives can be deduced from a nature, which, as it is conceived by modern science, has no values; that we can get the rational from the non-rational, the moral from the non-moral, the "ought" from the "is." It is, as Professor Moore points out, the fallacy particularly evident in modern evolutionism.

The fallacy does not, of course, arise in connection with the so-called physical sciences such as physics and chemistry. No one would seriously suppose for a moment that the nature of human good could be deduced from these. It is only when we come to the biological sciences that there is a direct reference to the human and that any inferences as to human values could conceivably be drawn. Now the only conception of biological value, or biological purpose, that could conceivably be extracted from the facts of this science—whether for the individual or the species—is sustenance for as long as possible for as great numbers as possible. The creature by filling his skin gets a better skin to fill. But surely unless we assume that mere persistence in being, mere biological life, is itself an absolute value, there is no possibility of deducing man's good from animal good, no possibility of deducing man's moral values from a conception of value, as mere survival, which is essentially amoral. Man, to be man, must live by values higher than any deducible from nature in this sense. If we are to deduce them from nature they must be wholly different from those

developed in our Western Christian civilization, as Nietzsche clearly saw.

D

It is easy to be misunderstood here and I wish if possible to avoid misunderstanding. Surely, it will be said, you are not telling us that scientists and philosophers are now denying the truth of biological science and evolution. Surely you yourself are not denying that man—this reasoning and valuing man of whom you are speaking—did actually evolve by natural processes from anthropoid ancestry. This is not seriously disputed even by those whose deepest feelings are opposed to such admission.

Certainly I am not denying these facts, in so far as they are facts. Still less am I suggesting that modern social science disputes these facts. What I am denying—and what much of modern thought is coming to see must be denied—is this complete naturalization of man, of his intelligence and his morals, which men have thought to be the necessary consequences of these facts. What I am denying is that the values by which man, as man, lives can be deduced from these facts of biological nature. In other words, I am maintaining that man, who has emerged from nature, transcends nature. That, in Emerson's words, there is one law for things and another law for man. The laws for man cannot be reduced to the laws of nature without fallacies which, while in the first instance theoretical, end in being practical also.

I am not denying the facts of biological evolution, but simply maintaining that transcendentalism of man and his values which has been the central contention of our entire European religion and philosophy and which found its modern expression in the critical idealism of Kant. This, I believe, no developments of modern science, when rightly understood and appraised, have in the least affected. In any

case, it is the conception of man with which our entire democratic dogma is bound up and without which it has no logical foundations.

But, to return to the naturalistic fallacy of which we have been speaking, I cannot help feeling that a large part of social science since Darwin and Spencer is a magnificent exploitation of this naturalistic fallacy. It was Nietzsche who made this clearest to me personally. Of the British social and moral philosophers of the last century he said that they were either knaves or fools. They tried to graft on this biological naturalism the moral values of Greek and Christian civilization which rest on different premises and upon an entirely different view of man. Either they were really conscious that this could not be done—in which case they were knaves; or they had not intelligence enough to see that it could not be done—in which case they were fools.

This is strong language but surely this is a place where strong language should be used. Surely we have but to look the facts fairly in the face to realize that no language is too strong. Granted that our human ways of life were the products of what we call natural selection; granted that our intelligence and our morals were made by nature for a natural object; certainly they have developed along lines which are independent of selection, perhaps in opposition to it. As the late Earl Balfour has said: "No evolutionary explanation can bridge the interval between nature and man. If we treat the Sermon on the Mount as a naturalistic product it is as much an evolutionary accident as *Hamlet* and the Ninth Symphony."

V. SCIENCE AND VALUE: INSTRUMENTALISM IN THE SOCIAL SCIENCES

A

The standing problem of modern philosophy, writes John Dewey, is the problem of science and value, or, as he puts it, "the relation of science to the things we love and prize." After what has gone before we must, I think, all agree with him. For him, as for many representatives of the social sciences, this problem is to be solved, however, by the application of the operational and instrumentalist conception of science to our moral and political values. Earlier in this lecture I spoke of the degradation of scientific dogma and of the instrumentalism as the last stage of the process. It is when this instrumentalism is applied to man and to our human values that, as I maintain, the full implications of the position finally appear.

The argument runs as follows. The physical sciences, we are told, have abandoned the ancient scientific dogma of absolute knowledge of an antecedent rational world-order and substituted for it the purely instrumentalist conception of control of process through experiment. Let us now, it is argued, carry this notion over to the material of the social and moral sciences and to the judgments of value which they contain. Values, in other words, like everything else, are to be tested by experiment, either actual or in thought. Thus the past of any value is to be used just as in any laboratory experiment. We neither glorify it nor condemn it. It is merely to be interpreted according to the special problem created by the specific situation. When we operate with values in this way we shall, just as in the physical sciences, achieve, not certainty, but control. And this is all that any sensible person should wish.

Now I shall not argue against Professor Dewey's posi-

tion as a whole. That would involve more scientific and philosophical technicalities than are either desirable or possible in a lecture such as this. Nor shall I attempt to refute the view of science and scientific method involved, although it represents, I believe, the essential degradation of scientific dogma of which I have spoken. Nor shall I raise the question whether, even if this conception of science were sound, the method of the physical sciences could be thus carried over analogously to the social sciences. I do not think it can, as my discussion of the principle of the decentralization of the social sciences has indicated. I shall confine myself to an examination of this operational method as applied to human values in order to see how it works out.

On the face of it the argument of an analogous instrumental test for human values seems cogent. But it is surprising how many difficulties immediately appear.

How do we, in the first place, test the success of a value? Values undeniably "work." We have monogamy, bigamy, polyandry, and a dozen other systems of marriage. They have all worked, since people seem to have lived and sung under each of them. Taboo against murder works, since societies flourish where the taboo is present; a systematic killing of aged parents also works. The latter custom is even necessary where food is scarce and existence hard; perhaps to that extent it has even a pragmatic value. But because these various ways of life work, they do not necessarily succeed or fail. To determine the success or failure in any ultimate sense we must first know what the ends of man ultimately are, in other words, what are the intrinsic human values.

It may be admitted, then, that up to a point the instrumentalist conception enables us to explain, but it gives us no criterion of evaluation. This is immediately evident when we attempt a revaluation of values, when, in other words, we

attempt to pass to the judgment of new values (economic, social and political) which are proposed—when for instance we wish to pass judgment upon the new forms of life, the "new orders," as they are called, which men are now proposing to us.

When judging the workability, the effectiveness of a value, we have to use some other value to appraise it. We may know the processes by which people are made fat, lean, or middling; but we shall have to decide whether we ought to make them fat, lean, or middling. Suppose then we decide to make them lean in order that they may run faster. Then we have founded our value of leanness upon the value of speed in running, which must in turn be founded on another value, and so on. Where then are our key value or values? By the method proposed there could obviously be no key value in the sense of its antecedent existence, an existence which we must mutually acknowledge if we are to make any intelligible judgment. This point is all-important. There is no judgment inherent in mere process. Somewhere, sometime, we must come upon end or key values—absolutes which alone can give meaning and validity to our instrumental judgments. It is only by something that transcends process that process itself can be either understood or judged. This our entire European culture has, until the most recent times, fully understood. From Plato and Aristotle, through the whole of Christian and Western philosophy, this has been fundamental. It is, indeed, part of the rationality of scientific dogma. It is here also, as we shall see, that the entire doctrine of natural and inalienable rights finally rests.

Instrumentalism is powerless to give us light on ultimate moral and political issues and is surely powerless before the issues which face man today. And need I add that the social sciences that employ it have nothing to say on these ultimate

issues? If they suppose that they have they are deceiving both themselves and us. Oh, I know, of course, how such an argument is usually turned aside. In popular circles an appeal is always made to "all intelligent, right-minded, and forward looking people." But who are these people and how do we know that they are intelligent and right-minded regarding human values? Surely only if we know what these ultimate intrinsic values are. And such knowledge the instrumentalist cannot give us.

Need I labor my point? Surely it is obvious. But it is not so obvious how significant it is in the situation in which we find ourselves today. We set the democratic values and the democratic way of life over against the anti-democratic values of the totalitarian philosophies. But how do we know that ours are the genuine values? How do we know, from a purely experimental point of view, but that our values will no longer work, and that the values of *Blut und Boden* represent "the wave of the future?" How do we know that the so-called humane values of democracy are not, as Nietzsche insisted, decadent values? How do we know that, as Mr. Russell maintains, freedom, if not the highest good, is certainly the highest political good? Granted that we know the processes by which men are made according to certain political patterns, how do we know the truth and value of these patterns, whether democratic, fascist, or national socialist? All we can say, on the assumptions of the instrumentalist, is this: "I do not like you Mr. Fell, the reasons why I cannot tell." Oh, there will be reasons of a certain kind—and some of them will be rationalizations—but as to any ultimate reasons, the very premises of instrumentalism exclude them.

B

Here again, it is easy to be misunderstood and I would, if possible, avoid misunderstanding. This is no attack on

Professor Dewey, either as a noble democrat or as an American publicist whom we all delight to honor. In these respects he is in many ways our first citizen. I wish merely to point out that the very qualities which we honor in him come not from his instrumentalist philosophy but from certain fundamental dogmas by which he, as well as his New England ancestors, has lived. Nor do I deny an important relation of science to values; I am merely seeking the right relation. Professor Conklin, to whose lectures I have referred, has something to say on this point and comment on his words may help to make my own position clear.

"It is often said," he writes, "that science has nothing to do with values; one might as well say that intelligence and reason have no relation to values. What are values but means and measures of satisfaction? It is impossible for a scientist, or any one accustomed to deal with evidence or to face reality, to appreciate the statement that science has nothing to do with values. It has certainly created innumerable conveniences and comforts, it has controlled diseases and pestilences, relieved suffering, prolonged life. It has destroyed horrible superstitions. . . ." "In all these respects," he concludes, "the ethics of science does not differ from the ethics of Christianity."

We are familiar enough with this line of thought, so characteristic of the nineteenth century. All this science has indeed done, but it has often done equally evil things. The best that we can say is that it is neutral. As to the identity of the ethics of science with the ethics of Christianity, I wish it were so, but the facts are otherwise. The plain truth is that science, as conceived in the modern world, has no ethics; the best we can say is that it is amoral. Science and scientific method, in the modern sense, can determine merely means to ends, never the ends themselves, merely what we call instrumental values, never the intrinsic values which

these instrumental values presuppose. It is high time that we learned this fundamental truth.

VI. THE FUNDAMENTAL DILEMMA OF THE MODERN MIND

A

At the beginning of this lecture I spoke of the strange contradictions which permeate our entire culture, our science and our philosophy, our literature and our art, contradictions which are everywhere recognized as constituting the crisis of the modern world. This crisis is epitomized for us in the issue presented by the topic of this lecture, *Science and Man*. Modern man has been faced by a dilemma, one of the cruelest dilemmas upon which the human spirit has ever been impaled. What is this man of whom humanitarians prate and to whom the politicians appeal? What is man of whom, as the psalmist supposed, "God is so mindful?"

I think you will find that there are only two possible answers to this question, one of which must in the last analysis be chosen. There is no middle ground. Either man is but a part of nature or he transcends nature. In the first case, his intelligence and his morals, his science and his philosophy are mere temporal adaptations to his environment and have no more significance and validity than that. Or, on the other hand, he transcends nature, in which case his reason and his values, his science and his morals, get their significance and validity from that which is above him—from the "transcendentals," as the great philosopher St. Thomas called them, absolute truth, goodness, and beauty. There may be a middle ground but I have yet to find it. Certainly it is not to be found in the new naturalism of which men speak.

This is the great, the tremendous, question which lies at the heart of all our confusion and distress. We are trying to decide whether we are sons of God or merely high-grade simians. This indecision of the modern man did not at first seem to trouble us but it is now beginning to get under our skins. We are finding it increasingly difficult to talk about freedom and justice, about all ideals and values—even the truth of science itself—without sticking our tongues in our cheeks. All such talk sounds ridiculous in the mouths of high-grade simians.

I have presented this dilemma not in order to indulge in intellectual fireworks—this is a childish pastime. Nor yet in order to coerce your thought—I probably could not do so if I wished—but rather because it is precisely to this dilemma that we are led if, as philosophers, we think stubbornly about fundamental things.

Does this alternative embarrass you? This logical embarrassment is nothing, I assure you, compared with the actual embarrassment which confronts the practical world today. For it is a condition, not a theory, that faces us. The rival ideologies, as we call them, which dominate the political world today embody this alternative. Both national socialism and communism accept this purely naturalistic conception of man, avow it openly, and build all their procedures, both theoretical and practical, upon it. Shall we then say that the ideology of democracy, with its dogmas of natural rights and absolute justice, embodies the alternative conception of man? I wish it were possible to answer with an absolute affirmative. This democratic dogma, it is true, rests, in the last analysis, upon the transcendental conception of man, but there has been a steady degradation of this dogma also, as we shall see in the following lecture. Enough here that we understand fully what the problem of science and man means in the modern world.

B

I have no apologies to make for this long—and as it may seem to some of you—abstract and over-technical discussion. Nor have I any apologies to make for the forthright and—as it may also seem to some—dogmatic way in which I have sought to present the issue. Clear thinking demands plain speaking and now, if ever in the long story of mankind, both are needed.

"Science and Man" is, as I have sought to show, the central problem of the modern world. From it flow all the other problems which will be discussed in the lectures to come. In concluding this initial lecture we may properly return to that symposium upon this first topic and take as our final word a summary of its conclusions as expressed in the preface. "Nineteenth century scientific materialism," we are told, "closed the mind of man to what is above him. Twentieth century psychology opened the mind of man to what is below him. What is essential now is the awaking of man's consciousness to what is above, beneath, around and within him."

Few of us would, I think, disagree with this general conclusion. But such an awakening certainly cannot come from science as now understood. If science is to lead us to such understanding it must be science in the ancient and honorable sense. Do not misunderstand me. I, for one, believe that faith in the primacy of reason and in freedom through science is an essential part of our entire democratic dogma. But I also believe that this very faith in freedom through reason and science has itself been endangered by certain developments in modern science itself. It is this danger that I have sought to point out. The illusion that freedom is to be achieved through scientific invention and that automatic progress is certain through technology, has been largely

dispelled. The danger is that with the loss of our illusions we may lose our faith also.

Corruptio optimi pessima. It is only when the best is perverted that we get the worst. It is the corruption of the noble scientific dogma with which our Western European culture started that has given rise to the corruptions within that culture itself. It is the divorce of science from wisdom, and from the moral and spiritual values implied by wisdom, which has generated the contradictions and excesses which have marked the last stages of scientific development. It is finally the identification of knowledge with power and all that this involves which threatens to make of science itself a frightful Molloch which will end in devouring its own children.